

Investors' images of the stock market: Antecedents and consequences

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Abstract

This research studies antecedents and consequences of stock market image, defined as the sum of impressions about the stock market. It seeks to understand how several personality-oriented, cognition-based, and demographic variables influence investors' images of the stock market and how these images impact investing behaviors and outcomes. The findings from cross-sectional survey data suggest an individual's financial literacy, propensity to trust, and sociability are important antecedents of his or her perceptions about the stock market. The data also show that stock market image affects investing motives, risk reduction efforts, emotional responses, and degree of satisfaction associated with investing. © 2016 Academy of Financial Services. All rights reserved.

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1. Introduction

In recent years there has been an interest in how subjective impressions of the stock market affect participation in it. For example, Guiso, Sapienza, and Zingales (2008) studied investors' perceived trustworthiness of the stock market and found they assess the risk of

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being cheated when deciding whether to buy in. Keller and Siegrist (2006) observed that perceptions of stock profit-making and taking as unethical, or of the stock market as a casino, predict behaviors related to trading securities. More generally, MacGregor (2002) suggested that the investing behavior of retail investors will be strongly impacted by their images of the stock market, primarily because many of them lack the skills to process the available objective data.

An effort to build on this line of inquiry introduced the concept of stock market image and developed a scale for measuring it (Dobni and Racine, 2015). Formally, that work conceptualized and defined stock market image as a multidimensional construct that captures the sum of the total perceptions or impressions an individual holds about the stock market, separate and apart from those that may be held about specific stock or company listings. Practically speaking, understanding this “whole picture” view of the stock market was considered to be important because of its potential influence on investors’ behaviors, expectations and experiences, and the potential value of image as a strategic positioning tool (Bravo, Montaner, and Pina, 2012).

To some degree, perceptions and impressions about the stock market may be controllable by institutions that facilitate and regulate participation in it (e.g., stock market owners, securities regulators, and investment advisory providers). However, if strategies are to be devised to form, change, downplay, confirm, or otherwise compensate for them, there is a need to better understand their origins and implications (O’Shaughnessy, 1987). The main purpose and contribution of this study was to test several hypotheses related to the antecedents and consequences of stock market image. More specifically, it sought to understand how several key personal factors might influence street-level images of the stock market, and how these images might in turn influence investor behaviors and outcomes. As more becomes known about these relationships, strategies to manage or remediate investors’ images of the stock market can be better specified.

To accomplish these goals, this article first provides a brief review of the literature on the form and content of stock market image, and develops and advances several hypotheses pertaining to the construct’s antecedents and consequences. Next, the field study undertaken to empirically investigate these hypotheses is described, followed by an analysis of the research results and a discussion of robustness. The article concludes by examining the relevance of the findings for managers and identifying research implications and limitations.

To guide the discussion that follows, a framework that depicts the key variables and relationships included in the study is presented in Fig. 1 below. Note that while the concept flow depicted in this figure truly is left to right, and there is a natural implied direction of causality, it is recognized that it is unlikely that the image an investor has in her first investment will be exactly the same image for her tenth investment. Thus, while there is in our opinion an inferred direction of causality, the real world investor will likely follow the path depicted in Fig. 1 in an iterative process before “settling” on an image that will inform that investor’s decisions. Nonetheless, it is rigorously correct to interrogate the impact of stock market image using the process described below, with its theoretically motivated causality direction.

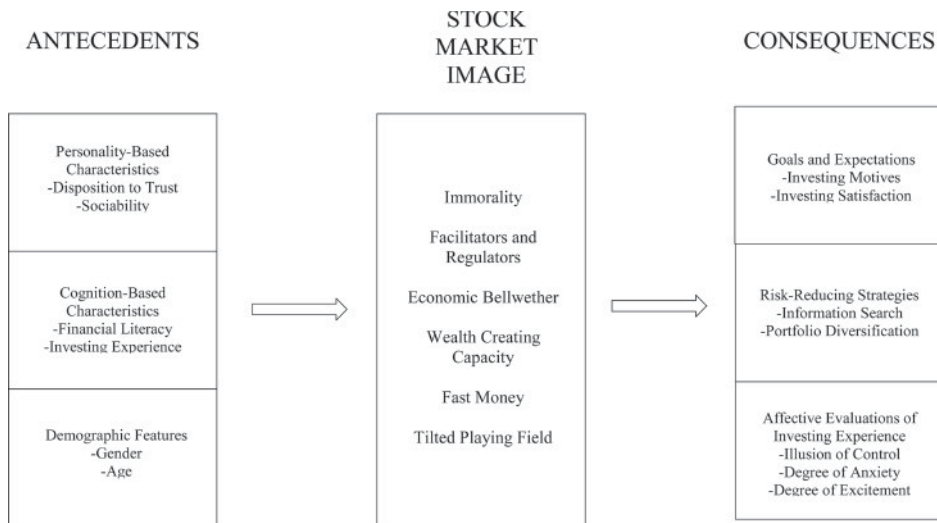


Fig. 1. Antecedents and consequences of stock market image.

2. Nature of stock market image

Image research is concerned with the mental impressions or *gestalts* that are formed about target objects (Stern, Zinkhan, and Jaju, 2001). Regarding the stock market, individuals may possess a set of ideas, beliefs, and feelings about it that reflect either a positive or negative evaluation. This might include perceptions of its potential for gain or loss, the safety of its investing environment, and the fairness of its playing field, to name a few. These impressions may or may not be correct, and may be based on information that is less than complete or factual (Dichter, 1985). As they fuse into an “image” of the stock market, they are likely to influence an investor’s choices and behaviors.

The notion of stock market image-making has deep historical roots. In 1913 the then self-regulated New York Stock Exchange (NYSE) began a public relations program to counteract the threat of external oversight, hoping to transform the stereotype of the NYSE from an immoral and engineered “gambling hell” to that of a “free and open” “people’s market” (Ott, 2004). Decades later, its “Own Your Share of American Business” campaign was likewise an effort to reshape public perceptions, this time to encourage mass stockownership (Traflet, 2004). Marketing tools were used to position stockholding as an act of patriotism and the stock market as a reputable place for ordinary families to benefit from wealth redistribution (Traflet, 2004).

Over the years, the study of image in the financial literature has been quite limited. Clark, Thrift, and Tickell (2004) traced the image of the international finance/investment management industry, observing that it has evolved from a serious, rational entity to an entertainment-based activity, due primarily to its mediatized environment. Image issues around financial intermediaries have also been investigated, such as Strader and Ramaswami’s (2004) study of investor perceptions of traditional versus online channels for trading securities. The majority of image-related financial studies has focused on the influence of industry, corporate, and brand images or reputations on investor choices and preferences (e.g., Aspara and Tikkanen, 2008, 2010, 2011; Lucey and Dowling, 2005; MacGregor, Slovic, Dreman, and Berry, 2000; Statman,

Fisher, and Aninger, 2008). The logic underlying this work is that image is a simplifying heuristic that may curtail rational decision making; for better or worse, mental shortcuts have been shown to routinely trump processing effort for investment choices (Baker and Nofsinger, 2002; Da, Engelberg, and Gao, 2011). More recently, perceptions about the stock market itself have been recognized as having relevance for investors. Inquiries of this ilk typically examine one or two image features, like the stock market's trustworthiness or gambling-likeness (e.g., Guiso, Sapienza, and Zingales, 2008; Keller and Siegrist, 2006), and correlate them with outcomes like participation or portfolio design.

In the marketing and consumer behavior literatures, the study of image relative to objects like product, brand, store, retail, company, and destination has been vast. Dominant among this work has been research that focuses on defining and conceptualizing the image construct, and developing and refining both context-specific and general image measurement scales. While there has been wide variation in how these issues are approached, common precedents are to view image as a transactional process between the stimulus object and the perceiver, and the content of image as a collection of perceptions on multiple dimensions (Stern, Zinkhan, and Jaju, 2001).

In the consumer behavior tradition, Dobni and Racine (2015) introduced and examined the concept of "stock market image," identifying several attributes on which it is based and developing a scale for measuring them. These attributes represented six underlying dimensions: perceptions about the stock market's immorality (e.g., gambling-likeness, prevalence of insider trading), the effectiveness of its facilitators and regulators (e.g., regulatory credibility, information transparency), its role as an economic bellwether (e.g., utility to economy, measure of economic health), the extent to which it supports wealth creation (e.g., soundness and safety, propensity for long-run payoffs), the extent to which it supports making fast money (e.g., short-term investment value, emphasis on "hot tips"), and the degree to which it is considered to be tilted (e.g., dominance of large investors, bias against small investors). The specific items that comprise this scale are displayed in Appendix 1.

3. Antecedents to stock market image

According to image theory, there are three categories of impression formation agents (Burmam, Schaefer, and Maloney, 2008): the personal and subjective characteristics of the perceivers, determinants related to image management efforts, like the marketing practices of stock market supply chain members, and external uncontrollable factors, such as the media hype surrounding the stock market (Clark, Thrift, and Tickell, 2004). Dichter (1985) argues that variables related to the perceiver's disposition, attitudes, values, and experiences are the most important shapers of image. As such, the area of concern in this study was on the characteristics of individual investors.

The first antecedent pertains to trust. Trust is thought to be particularly relevant in the finance context because the investing process is complex and indeterminate and has high risk and stakes. Olsen (2008) observed that trust lubricates the financial marketplace, encourages most investment, and underpins many stock market pricing anomalies. Especially for non-experts, the decision to invest in the stock market is to trust implicitly in the competence and reliability of its expert systems (Unerman and O'Dwyer, 2004). Guiso, Sapienza, and Zingales (2008) studied

trust in the stock market, which they described as the subjective probability of being cheated, and found a connection between low levels of trust and stock market avoidance.

The propensity to trust has been generally defined as “a stable disposition to believe in the goodness of others” (Bernerth and Walker, 2009, p. 218), and in the context of stock market investing trust has been defined as “the subjective probability individuals attribute to the possibility of being cheated” (Guiso et al., 2008, p. 2557). Trust is relevant to stock market image because there is reason to believe it will affect perceptions in a self-fulfilling way through an illusions of control process (Bernerth and Walker, 2009; McKnight, Cummings, and Chervany, 1998). That is, to assure themselves that things are under their personal control, individuals will look for and process information, behavior, or other cues in the environment in a way that confirms their level of trust. As such, those who have a more trusting nature are more likely to focus on positive rather than negative information and to interpret activities and events more favorably, and the opposite is likely to hold for those who are less trusting. As mentioned above, increased levels of trust are also associated with perceptions of decreased levels of risk.

There is reason to believe that an individual’s sociability will affect his or her perceptions of the stock market. Social interaction has been noted to promote stock market participation through such mechanisms as word of mouth information sharing and the enjoyment of discussing the market with peers (Hong, Kubik, and Stein, 2004). Talking about the stock market with others is a way not only to gain information about it but also to observe their emotional reactions to it, both of which inform one’s own opinions on the subject (Baker and Nofsinger, 2002). Bravo, Montaner, and Pina (2012) confirmed the extension of this effect to brand associations. They found word of mouth communications to be a main determinant of the corporate image of financial institutions, corroborating earlier research findings that the opinions of friends, family, and other people mattered more in image development than does organization-sponsored messaging. Hence, it is hypothesized as follows:

Hypothesis 1: Investor trust will be a significant predictor of stock market image.

Hypothesis 2: Investor sociability will be a significant predictor of stock market image.

Images can evolve from different processes, and are dynamic and subject to change. In the destination image literature, for example, images are identified as ranging from organic to induced to complex, a function of the information sources on which they are based and the level of the perceiver’s direct experience with the destination (Gunn, 1988). While an organic image arises from non-tourism information, an induced image develops from destination marketing efforts, and a complex image is a product of first-hand experience (Byon and Zhang, 2010).

It is similarly proposed that stock market images can vary as basic financial competences and experiences of investors vary. Research shows that stock ownership increases considerably with financial literacy, presumably because low literacy individuals have little knowledge of how the markets work (van Rooij, Lusardi, and Alessie, 2011). As knowledge and experience accumulate, new insights are gained that can fundamentally change beliefs, behaviors, and attitudes (O’Shaughnessy, 1987). Guiso et al., (2008) observe that new knowledge can help break down the barriers caused by a lack of trust in the stock market.

Further, the literature on consumer expertise suggests that novices and experts process information differently. Novices weight negative information more heavily when making evaluations and tend to be influenced more by stereotypical data and less by individuating information (Maheswaran, 1994). These differences may be critical to stock market image, as press coverage of the stock market tends toward negativity and sensationalism. Experts also have more fully developed schemas of target objects, and better abilities to analyze and elaborate on given information (Alba and Hutchinson, 1987). As such, investing aficionados can more effectively sort stock market fact from fiction, and more objectively assess the risks and rewards associated with it. Therefore, it is hypothesized that:

Hypothesis 3: Investor financial knowledge will be a significant predictor of stock market image.

Hypothesis 4: Investor experience will be a significant predictor of stock market image.

The third set of factors hypothesized to affect stock market image relates to demographics. Two variables—gender and age—are investigated. Research to date provides abundant evidence that men and women differ in financial investment behavior, including their risk tolerance, their interest and confidence in investing, and the composition of their portfolios (Hira and Loibl, 2008). Ford and Kent (2010) observed that female and male college students responded differently to perceptions of threat emanating from the stock market. Men took a more opportunistic view, seeing its potential for reward, and women were more apt to be intimidated by it and focus on the potential for loss. Women were also more pessimistic about future stock market performance, perceiving the outcomes to be more uncertain and uncontrollable. Barber and Odean (2001) similarly observed gender differences, noting that the overconfidence of men compared with women regarding financial matters leads to unrealistic beliefs about their ability to predict stock market performance.

Age-related differences in stock market image are likewise expected. Popular press reports suggest that most Generation Y investors will never find the stock market to be in their comfort zones (Brown, 2012). For those that might, optimism, cockiness, and long investment payoffs may produce a more opportunistic view (Ford, Devoto, and Kent, 2007). Malmendier and Nagel (2011) offered evidence of generational effects on beliefs about the stock market because of exposure to different macroeconomic experiences, such as the postwar boom years and stock market peaks and downturns. These memories and influences were found to diminish over time, but particularly for younger people recent experiences were shown to have stronger effects. Vissing-Jorgensen (2003) similarly observed that different age groups had time-varying differences in expectations about the stock market. Thus, it is hypothesized that:

Hypothesis 5: Investor gender will be a significant predictor of stock market image.

Hypothesis 6: Investor age will be a significant predictor of stock market image.

4. Consequences of stock market image

Image is posited to be an important predictor of several consumer responses. In the consumption context, perceptions and beliefs have been credited with influencing all

aspects of the consumer decision making process, including information search, purchase preferences and choices, post-purchase processes, and future behavioral intentions (O'Shaughnessy, 1987). The power of image is said to reside in its use as a heuristic or shortcut to simplify decision making (Tversky and Khaneman, 1974), particularly in consumption situations that are marked by uncertainty, complexity, or intangibility (Stern, Zinkhan, and Jaju, 2001).

The primary mechanisms through which image is thought to exercise influence are by functioning as an information cue and as an expectation (Andreassen and Lindestad, 1998). Expectations are noted to be crucial in economic decisions such as investing, as these decisions are often made under conditions of uncertainty and expectations have a forecast component that will help consumers gauge the likelihood of future outcomes (van Raaij, 1991). Expectations are adaptive and formed over time, and may or may not be based on rational or solid evidence (Aspara and Tikkanen, 2008).

In addition to shaping the experiences that are sought and expected from it, how a target object is perceived will shape how the perceiver reacts to it (Ittelson, 1974). The social psychology research on social stereotypes demonstrates that a perceiver's actions with respect to a target will be based on stereotype-generated attributions about the target (e.g., such as stereotypes around race, gender, physically attractive vs. unattractive persons; Snyder, Tanke, and Berscheid, 1977). Further, these stereotypes were shown to have a self-fulfilling nature: even when the impressions held by the perceivers about the targets were erroneous, they initiated behaviors on the part of the perceiver that behaviorally confirmed the stereotypes.

In the same way, it is suggested that stock market image will influence investor behaviors and experiences. This might include the decision to avoid or participate in equities markets, the motives pursued in stock market investing, the ways in which investors mitigate risk, and the specific investment choices they make. Regarding investing motives, for example, it could be expected that an investor who sees the stock market as casino-like will be driven by aims related to entertainment or speculation, using the stock market to satisfy needs around recreation, sensation seeking, or wealth aspirations (Dorn and Sengmueller, 2009). By contrast, impressions of the stock market as a safe and sound place to invest for patient investors could lead to motives for participation such as saving for retirement or accumulating long-term wealth. The proposition that an investor's perceptions of the stock market will be manifested in his or her responses to it is also supported by theories on attitude-behavior consistency (Ajzen and Fishbein, 1980; Aspara and Tikkanen, 2008b; Bravo, Montaner, and Pina, 2012). Hence, it is hypothesized that:

Hypothesis 7: Stock market image will be a significant predictor of investing motives.

The second consequence of stock market image examined in this study is customer satisfaction. Customer satisfaction is a post-purchase construct that is calculated as a comparison of actual with expected outcomes, and in a cumulative sense is defined as an overall evaluation based on consumption experience with a good or service over time (Anderson, Fornell, and Lehmann, 1994). The argument is that an investor develops expectations about the stock market based on the image he or she holds of it, and to the extent these expectations are confirmed or not the satisfaction or dissatisfaction evaluation will be formed. Studies in the brand, corporate, and store image literatures offer specific empirical support for the

relationship posited between image and customer satisfaction (Bloemer and DeRuyter, 1998; Martenson, 2007; Ryu, Han, and Kim, 2008). Therefore, it is hypothesized that:

Hypothesis 8: Stock market image will be a significant predictor of investor satisfaction.

The next set of consequences posited to be influenced by stock market image involves strategies for risk resolution. Observing that it is perceived rather than objective risk that directs the decision maker's behavioral patterns, Cho and Lee (2006) studied risk-reducing strategies in the context of the perceived level of risk of the stock market. They defined these strategies as behavioral responses adopted by investors to reduce or avoid risk, and noted them to possibly include such actions as engaging in extensive information search, relying on market-provided sources of information, and limiting the proportion of financial assets invested in stocks. Their findings showed a significant link between perceived risk associated with the stock market and the use of several of these vulnerability-lowering behaviors.

Research has shown that investors use schematas and stereotypes like brand image to judge the risk associated with investment assets (Ganzach, 2000; Jordan and Kaas, 2002). Aspara and Tikkanen (2008b) similarly observe that an investor's general evaluation of a company can direct various judgments about it, including judgments or expectations of the risk associated with its stocks. In like manner, it is posited that investors' images of the stock market are evaluative and that inherent in them are expectations and cues about its risk. For example, an investor who views the stock market as being inadequately regulated or corrupt is apt to attribute more risk to it than does an investor who views the regulation as effectively safeguarding investor interests and the playing field as level. Correspondingly, different perceptions are likely to cue different use of risk reduction strategies by investors. It is hypothesized that:

Hypothesis 9: Stock market image will be a significant predictor of the use of risk reducing strategies.

Finally, there are also likely to be emotional or experiential reactions to stock market image. The literature recognizes that emotions are an important part of consumer response (Richins, 1997); when consumers shop for, purchase, or use goods and services, they have subjective, internal reactions to them that can vary in strength, intensity, and valence (Brakus, Schmitt, and Zarantonello, 2009). In consumer research there has been wide variation in the content of emotional responses studied, these categorized hierarchically by Laros and Steenkamp (2005) from the superordinate level of negative and positive affect to a subordinate level of specific emotions that tap anger, fear, shame, contentment, and happiness.

Just as emotions can impact how a situation is perceived, emotional experiences can be elicited by perceptions. Applying the stimulus-organism-response framework to a hospitality setting, Jang and Namkung (2009) found that perceptions about restaurant offerings helped to provoke emotions in patrons. The negative social connotations associated with gambling have been noted to generate feelings of guilt in gamblers (Mageau, Vallerand, Rousseau, Ratelle, and Provencher, 2005). Similarly, it is argued that the affective states of investors may be evoked by their perceptions of the stock market. For example, some may associate investing with the experiences of helplessness, loss of control, titillation, or excitement,

based on the extent to which they see the stock market as a casino or its perils as daunting. Levels of anxiety, fear, confidence, or worry may be a function of how such stock market features as integrity, expected payoffs, and utility are processed. The stock market is widely perceived to be an emotional place, and it is hypothesized here that impressions about it can in turn affect an investor's emotional space:

Hypothesis 10: Stock market image will be a significant predictor of affective states of investors.

5. Research methodology

This study was conducted as part of a larger research project that examined several issues around stock market image. To investigate the hypotheses of interest, a quantitative survey research design was used. The sample for the study was comprised of individuals 18 years and older living in Canada who were then currently invested in the stock market or who had previous stock market investing experience, leading to a total of 573 eligible respondents. Sample members were recruited from the Canada Talk Now online research panel, and the data were collected online over the period of April 18–25, 2012 by the Social Sciences Research Laboratory at the University of Saskatchewan. The Canada Talk Now panel has over 60,000 active members and based on total invites broadcasted to total starts, drop-outs, terminations, and quota fills experiences an overall cooperation rate of 15%. Relevant statistics on the sample including age, gender, and education are provided in Table 1. The sample is split with 49% male and 51% female. On average the respondents are between 56 and 65 years of age, have a technical diploma or certificate, 11.7 years of investing experience and an average net wealth of \$383,140.

5.1. Survey instrument

The survey instrument included all variables identified in Fig. 1. The measures for them are briefly described below and are reproduced in Appendixes 1 and 2.

To operationalize stock market image, the scale developed by Dobni and Racine (2015) was used. This scale is comprised of 32 statements regarding attributes of the stock market that are scored on a seven-point Likert-type scale. As described earlier, these statements represent six underlying image dimensions: eight pertain to the “Immorality” dimension, eight to “Facilitators and Regulators,” four to “Economic Bellwether,” four to “Wealth Creating Capacity,” three to “Fast Money,” and three to the “Tilted Playing Field” dimension.

The personality and cognition-based antecedent variables were measured as follows: disposition to trust by a three-item scale that asked about trust in and perceived reliability of other people; sociability by a six-item scale in which respondents reported the frequency of their interactions with others in various contexts; financial literacy by a set of ten quiz-like multiple choice questions that tested knowledge of the stock market and investing concepts; and investing experience by asking respondents the number of years they had been investing in the stock market.

Table 1 Descriptive statistics for variables used in the antecedent and consequence regressions

Variable	Mean ^a	Standard deviation
Antecedents		
Trust	3.82**	1.07
Sociability	3.45**	0.93
Financial literacy	5.07**	2.58
Investing experience	11.71**	7.51
Age	56–65	1.33
Gender (1 = male, 2 = female)	49% male, 51% female	0.50
Stock market image dimensions		
Immoral	3.64**	0.95
Facilitators and regulators	4.13**	0.98
Economic bellwether	4.95**	0.94
Wealth creation	4.08**	0.95
Fast money	3.67**	1.00
Tilted playing field	4.54**	1.02
Consequences		
Wealth accumulation	4.91**	1.53
Hobby	2.55**	1.67
Speculation	2.86**	1.75
Satisfaction	4.09**	1.65
Information search	2.35**	1.37
Diversification	7.43**	8.38
Out of control-in control	4.43**	1.55
Panicky-at-ease	4.42**	1.30
Excited-bored	3.47**	1.21
Controls		
Education	Technical diploma	1.35
Net wealth	\$383,140**	60,0961
Risk proneness	3.57**	1.39
Optimism	4.73**	1.04

^a**, * Indicate statistical significance at 1% and 5%, respectively.

Regarding the consequences variables, four separate investing motives—wealth accumulation, hobby and entertainment, saving for retirement, and speculation—were measured by asking respondents the extent to which each described their reasons for participating in the stock market. Investing satisfaction tapped the extent to which respondents were satisfied with their stock market returns. Two variables pertaining to risk-reducing strategies were assessed: portfolio diversification by the number of stocks respondents typically hold in their portfolios and information search by the number of sources they typically consult for investment decisions. Three separate affective states concerning control, excitement, and panic were modeled by asking respondents to record on semantic differential scales how they typically feel about being invested in the stock market.

Sociodemographic data collected included age, gender, education, and wealth. Gender is coded as one for male and two for female. Net wealth is calculated as the difference between total value of assets and total value of debts. Based on the existing literature, risk proneness, optimism, education, and net wealth were used as control variables (Cavezzali and Rigoni, 2012; De Bondt, 1998; Riley and Chow, 1992). Risk proneness was measured by asking

individuals about their willingness to take risks in financial decisions. An individual's level of optimism was assessed by averaging levels of agreement with six statements related to positivity about his or her future.

5.2. Data analysis

The potential antecedents of stock market image tested were trust, sociability, financial literacy, investing experience, age, and gender. The relationships between the antecedents and each of the dimensions of stock market image were examined using a linear regression of the form:

$$Y_j = \alpha + \sum_{i=1}^6 \beta_i X_i \times \varepsilon_j \quad (1)$$

Where Y_j = stock market image dimension $j = 1$ to 6 , [Y_1 = immorality, Y_2 = facilitators and regulators, Y_3 = economic bellwether, Y_4 = wealth creation, Y_5 = fast money, Y_6 = tilted playing field], X_i = one of the six antecedents, and ε_j is the error term. Regressions of Eq. (1) test our understanding of the factors that may influence an investor's image of the stock market.

Similarly, linear regression analysis was used to study the influence that an individual's image of the stock market may have on her or his investment motives, risk reduction strategies, emotional responses to, and satisfaction from, investing. These relationships were investigated using regression equations in the following format:

$$C_j = \alpha + \sum_{i=1}^6 \gamma_i Y_i \times \sum_{i=1}^n \delta_i W_i \times \eta_j \quad (2)$$

Where C_j represents consequences (risk reducing strategies [information search, diversification], affective states [excited-bored, out of control-in control, and panicky-at-ease], investing motives [wealth creation, hobby, and speculation] and satisfaction). Y_i = stock market image dimension $i = 1$ to 6 (as presented above), W_i = one of the control variables (risk proneness, optimism, education, and net wealth), and η_j is the error term. The regression implied by Eq. (2) allows an analytical assessment of the impact of stock market image on investment decisions.

Before analyzing the results of the multivariate analyses in Eqs. (1) and (2), univariate descriptive statistics were studied. All statistical tests were done at two levels of significance (0.05 and 0.01) but analysis within the text is based on a 5% level of significance unless otherwise noted. An F test on the goodness of fit is used for each regression. The individual hypotheses were tested using t tests and joint hypotheses were based on F tests. Tables 2 and 3 provide the univariate statistics (pairwise correlations).

Table 4 amalgamates the regression results for each of the six stock market image dimensions on the six antecedents. Similarly, Table 5 summarizes the consequence and stock market image regressions. To avoid problems with units of measurement, the regression coefficients were standardized by multiplying the parameter estimate by the ratio of the standard deviation of the regressor to the standard deviation of the dependent

Table 2 Correlations of the antecedents and the Stock Market image dimensions used in Eq. (1)

Variable	Trust	Social	Financial literacy	Investing experience	Gender (2 = female, 1 = male)	Age
Immoral	−0.4248**	0.0496	−0.3073**	−0.2166**	−0.0810	−0.1487**
Facilitators and regulators	0.1747**	0.1517**	−0.0628	0.0101	0.0712	−0.0376
Economic bellwether	0.2222**	0.0687	0.2556**	0.1891**	0.0059	0.1236**
Wealth creation	0.0652	0.1404**	0.1752**	0.0918*	−0.1557**	−0.0681
Fast money	−0.1508**	0.1097**	−0.2864**	−0.2056**	−0.0391	−0.1725**
Tilted playing field	−0.2510**	0.0328	−0.1669**	−0.0484	0.0129	0.0458

**, * Indicate statistical significance at 1% and 5%, respectively.

variable. This allowed a comparison of the magnitude of the coefficients both within and across regressions.

6. Results and discussion

6.1. Antecedents

The correlations of the antecedents with the stock market image dimensions (Table 2) show support for Hypothesis 1. Trust has significant relationships with five of the six dimensions considered: positive correlations with facilitators and regulators (0.17) and economic bellwether (0.22), and negative relationships with immorality (−0.43), fast money (−0.15), and tilted playing field (−0.25). Both the magnitude of the correlations and their signs are what might be expected; overall, a less trusting personality is associated with more unpalatable views of the stock market. According to Hypothesis 2, sociability and the stock market image dimensions should be related and the correlations support this for facilitators and regulators (0.15), wealth creation (0.14), and fast money (0.11). Under Hypothesis 3, we expect that financial literacy will impact one's image of the stock market. The correlations show that the financially literate investor tends to see the stock market more as an economic bellwether (0.26) or a tool for wealth creation (0.18) and less as an immoral (−0.31) instrument for fast money (−0.29) in a tilted playing field (−0.17). It is interesting that less virtuous images of the stock market are associated with lower degrees of financial literacy. Similarly, investing experience should have a relationship with stock market image (Hypothesis 4), and this is consistent with the correlations between investing experience and the immorality (−0.22), economic bellwether (0.19), wealth creation (0.10), and fast money (−0.21) dimensions. Gender differences only have an impact on the wealth creation perception of the market (−0.16): Being a female tends to reduce the view of the market as a vehicle for wealth creation. This provides limited support for Hypothesis 5 (that gender should be a significant predictor of stock market image). Finally, under Hypothesis 6 we expect and find a relationship between age and stock market image. The older an investor the less she/he views the market as immoral (−0.15) and a place for fast money (−0.17) and more as an economic bellwether (0.13). Overall, the pairwise correlations support Hypotheses 1–6 with trust and

Table 3 Correlations of consequences with Stock Market image dimensions

	Wealth	Hobby	Speculation	Satisfaction	Information search	Diversification	Out-of-control	Panicky-at-ease	Excited-bored
Immoral	-0.1780**	0.0734	0.1594**	-0.2863**	-0.0876	-0.1697**	-0.3343**	-0.3477**	0.0875
Facilitators and regulators	0.1721**	0.2175**	0.1749**	0.4053**	0.0115	0.0526	0.3270**	0.2322**	-0.2024**
Economic bellwether	0.2493**	0.1057*	0.0127	0.3513**	0.0785	0.1838**	0.3204**	0.2355**	-0.2111**
Wealth creation	0.2919**	0.3375**	0.1818**	0.4513**	0.1441**	0.1701**	0.3865**	0.2505**	-0.2998**
Fast money	-0.0195	0.1687**	0.3243**	0.0609	-0.0044	-0.1094*	0.0069	0.0025	-0.1131*
Tilted playing field	-0.0765	-0.0442	0.0666	-0.2706**	-0.0432	-0.1057*	-0.2599**	-0.3004**	0.1466**

***, ** Indicate statistical significance at 1%, and 5%, respectively.

Table 4 Antecedents of Stock Market image: Standardized regression coefficients, Eq. (1)

Independent variables	Dependent variables					
	Immorality	Facilitators and regulators	Economic bellwether	Wealth creation	Fast money	Tilted playing field
Trust	-.3783**	.1614**	.1623**	.0582	-.1123**	-.2637**
Sociability	.0725	.1224**	.0736	.1530**	.1028*	.0609
Financial literacy	-.2738**	-.0880	.2315**	.1333**	-.2684**	-.1591**
Investing experience	-.0632	.0317	.0862	.0894	-.0854	-.0023
Gender (male = 1, female = 2)	-.1170**	.0106	.0477	-.1487**	-.1186**	.0065
Age	-.0349	-.0506	.0488	-.1141*	-.0771	.1252**
R^2	.2771**	.0554**	.1233**	.0871**	.1427**	.1040**
N	527	534	538	538	546	550

**, * Indicate statistical significance at 1% and 5%, respectively.

financial literacy appearing to be the most important antecedents both in terms of (absolute) magnitude of correlation as well as frequency of significant correlations.

Multivariate regression analysis was used to assess the unique relationships between stock market image and each antecedent while controlling for the influence of all the remaining right hand side variables. Tests for multicollinearity (discussed in the robustness section) show that the coefficient estimates are reliable and the F -tests indicate that each model is statistically relevant so we precede with presentation of the individual regression results. As illustrated in Table 4, the antecedents as a group have the highest goodness of fit ($R^2 = 0.2771$) when explaining immorality and the next best fit is for the fast money dimension ($R^2 = 0.1427$). Overall the most influential antecedents of stock market image, both in terms of frequency of significance and coefficient magnitude, are financial literacy, trust, and sociability. However, as the discussion below illustrates, the key antecedents vary across image dimensions.

The data continue to support the intuition that a person's ability to trust will impact his or her views of the stock market. Similar to the simple correlation results, trust plays a significant role in shaping the image of the stock market on five of the six image dimensions. The more trust investors have, the less likely they think the stock market is immoral ($b = -0.38$), a venue to make fast money ($b = -0.11$), or a tilted playing field ($b = -0.26$), and the more likely they view it as being effectively facilitated and regulated ($b = 0.16$) and an economic bellwether ($b = 0.16$). Only wealth creating capacity is not significantly related to trust, perhaps suggesting that investors rely on something more tangible than trust when assessing the stock market as a reliable tool of wealth creation. Thus, in general, the results support Hypothesis 1: Investor trust will be a significant predictor of stock market image.

Does social interaction impact one's view of the stock market? Hypothesis 2 is supported by a significant positive relationship between sociability and facilitators and regulators ($b = 0.12$), and wealth creating capacity ($b = 0.15$). Furthermore, while a more social person sees the stock market as a place to make fast money ($b = 0.10$), there is no significant connection between sociability and the tilted playing field dimension. The nature of the sociability may

Table 5 Consequences of Stock Market image: Standardized regression coefficients, Eq. (2)

Independent variables	Dependent variables									
	Investing goals and expectations			Risk reduction strategies			Affective experiences			
	Wealth	Hobby	Speculation	Satisfaction	Information search	Portfolio diversification	Out-of-control	Panicky-at-ease	Excited-bored	
Intercept	0.0000	0.0000*	0.0000*	0.0000	0.0000	0.0000	0.0000*	0.0000**	0.0000**	0.0000**
Immorality	-0.0166	0.2645**	0.1974**	0.0153	-0.0763	-0.0533	-0.1270*	-0.2151**	-0.1140	
Facilitators and regulators	-0.0477	0.1326*	0.1498*	0.2104**	-0.1156	-0.1363	0.0661	0.0319	-0.0425	
Economic bellwether	0.1199	-0.0108	-0.0081	0.0169	0.0217	0.1008	0.0253	-0.0435	-0.1217	
Wealth creation	0.2171**	0.2405**	0.0096	0.2337**	0.1338	0.1922**	0.2662**	0.0873	-0.1503*	
Fast money	-0.0730	-0.0216	0.2368**	-0.0712	0.0275	-0.0955	-0.0526	0.0318	-0.0236	
Tilt playing field	0.0842	-0.0501	0.0082	-0.1045*	0.0168	0.0173	-0.0594	-0.1122*	0.0992	
Risk proneness	0.1679**	0.2390**	0.2497**	0.1225**	0.1430**	0.0459	0.1195**	0.1923**	-0.2065**	
Optimism	0.1271**	-0.0124	0.0241	0.0993*	-0.0405	0.0975	0.1463**	0.1350**	-0.0034	
Education	0.0443	0.0506	0.0258	0.0843	0.1897**	0.0109	-0.0350	-0.0068	-0.1223**	
Net wealth	0.0742	0.0212	-0.0124	0.0488	0.0800	0.1356**	-0.0094	0.0133	0.0621	
R ²	0.1592**	0.1944**	0.1985**	0.2758**	0.1039**	0.1089**	0.2601**	0.2133**	0.1608**	
N	429	427	428	422	425	421	430	429	428	

***, ** Indicate statistical significance at 1% and 5%, respectively.

play a role in this regard, for example, individuals who more regularly interact with a gaming crowd may absorb different notions about stock market biases than those who travel in more conservative investing circles.

Of the two cognition-based antecedents, financial literacy appears to be more dominant than investing experience in explaining stock market image. Financial literacy is expected to lead to the ability to properly digest media coverage of the stock market and to appropriately judge economic events. The findings suggest that the financially savvy individual tends to view the stock market as a sounder investing environment. The more financially literate investor sees the stock market as an economic bellwether ($b = 0.23$) and a venue for wealth creation ($b = 0.13$), and is less likely to see it as immoral ($b = -0.27$), a place to make fast money ($b = -0.27$), or a tilted playing field ($b = -0.16$). Of interest to the authors, financial literacy is negatively but not significantly related to perceptions of the efficacy of stock market facilitators and regulators, possibly reflecting beliefs that these participants are outmanned, under-resourced, or lack expertise, or are simply not relevant to the financially savvy investor.

The second cognition variable, years of investing experience, mathematically strengthens the image of the stock market on every dimension but is not statistically significant. Overall, analysis of the cognition antecedents suggests that financial knowledge improves investor perceptions of the stock market, which is consistent with Hypotheses 3, and that it may be the substance of an investor's experience rather than the tenure that is relevant to stock market image formation.

Each of the demographic variables leads to similar implications. The gender variable indicates that being a female is consistent with a perception of the stock market not only as immoral ($b = -0.12$), but also as a place to make fast money ($b = -0.12$) and to create long-term wealth ($b = -0.15$). These findings parallel in part other research which suggests that men are more optimistic than women about stock market performance (Ford and Kent, 2010). Age significantly impacts two stock market image components: the older the investor is the more likely the stock market is seen as representing a tilted playing field ($b = 0.13$) and less likely as providing a venue for wealth creation ($b = -0.11$). Being female or growing older suggests that one tends to see the earnings potential of the stock market in a more pessimistic light. Thus, both the bivariate and multivariate analysis supports the hypotheses to varying degrees. In particular, trust and financial literacy appear to be the most important antecedents for the six image dimensions.

6.2. Consequences

Stock market image is also an important predictor of investor consequences. Of the six image dimensions studied, a perception of the stock market as a place for wealth creation is the most influential and as a venue for fast money is the least influential across the nine consequences. Overall, both the univariate and multivariate results demonstrate strong support for the posited relationships between the dimensions of stock market image and investing motives (Hypothesis 7), investor satisfaction (Hypothesis 8), the use of risk reducing strategies (Hypothesis 9), and investors' affective states (Hypothesis 10).

To begin the investigation, the correlations between each image dimension and consequence were calculated and reported in Table 3. Tabulating the frequency of significant

correlations of the image dimensions across the consequences indicates that wealth creation is significantly correlated with all nine consequences, facilitators and regulators, and economic bellwether are significantly correlated with seven, immorality with six, tilted playing field with five, and fast money is correlated with four consequences. The highest significant correlations, in absolute value, are between the wealth creation image dimension and satisfaction (0.45), between facilitators and regulators and satisfaction (0.41), and between wealth creation and the affective state out-of-control-in-control (0.39). Thus, the pairwise correlations support relationships between stock market image dimensions and consequences with different dimensions being more important for different consequences.

Multivariate regression analysis was then performed to investigate the relationship between each consequence and the six stock market image dimensions while controlling for risk proneness, optimism, education and net wealth. Each of the nine regressions has an R-squared that is significantly different from zero at 1% (Table 5). In the robustness section, we also investigate potential issues caused by collinear explanatory variables and endogeneity between the image dimensions and the consequences and conclude that we can proceed with the results in Table 5. In general, the evidence supports significant relationships between the consequences and the stock market image dimensions. The individual results and the regression diagnostics will be discussed in more detail in the following sections.

The most important contributor, both in terms of magnitude and statistical significance, to pursuing a wealth accumulation motive is the view of the market as a place for wealth creation ($\gamma = 0.22$). None of the other stock market image dimensions is significantly involved.

Hobby and speculation have similar responses to the stock market image dimensions: They both have positive and significant associations with the immorality and the facilitators and regulators dimensions. The more immoral the stock market is perceived to be, the more likely that the investing motive is recreational (hobby $\gamma = 0.26$, speculation $\gamma = 0.20$). Hobby and speculation investors also need to believe that there is an efficacious facilitator and regulator presence in the market (hobby $\gamma = 0.13$ and speculation $\gamma = 0.15$). In addition, a perception that markets are effective tools of wealth creation contributes to the pursuit of investing as a hobby ($\gamma = 0.24$), while a speculation motive and views of the markets as a place to make fast money are significantly related ($\gamma = 0.24$). Neither of these two investing motives is related to the tilted playing field or economic bellwether dimensions. Thus, in general, even in the presence of controls and allowing for multivariate relationships, the evidence supports a relationship between stock market image dimensions and the investing motives (Hypothesis 7).

Consistent with Hypothesis 8, an investor's satisfaction with her or his stock market experience is positively related to views that the stock market has regulatory credibility ($\gamma = 0.21$) and creates sound, long-run payoffs ($\gamma = 0.23$) and negatively related to the perception that it is biased against small investors ($\gamma = -0.10$). Thus, a stock market that investors perceive to be replete with ethical professionals and effective regulation and an equitable playing field for serious wealth creation potential will contribute to investor satisfaction.

It appears that investors who perceive the stock market as a lucrative vehicle for building wealth will more actively pursue risk reduction strategies (information search and portfolio diversification efforts increase by 0.13 and 0.19, respectively). On the other hand, diversification efforts will be curtailed when the stock market is viewed as a venue for making fast money. This

is likely an effort to leverage the perceived upside of this investing venue. If investors see the markets as primarily for short term goals (fast money), they either do not bother or they diminish risk reduction strategies as they see no value to their efforts or are possibly guided by an attitude of recklessness. Consequently, the evidence suggests that the wealth creation image dimension provides the strongest support for risk reduction efforts (Hypothesis 9).

The affective states tend to be related to wealth creation or to a perception of stock market corruption or to both. An investor will tend towards the excited end of the excited-bored spectrum and experience an increased feeling of being in control as the wealth creation dimension strengthens ($\gamma = -0.15$ and 0.27 , respectively) but it does not affect the panicky-at-ease state. Two of the three affective states are significantly negatively affiliated with the immorality dimension (out-of-in-control $\gamma = -0.13$ and panicky-at-ease $\gamma = -0.22$). The panicky experiences are also enhanced with the tilted stock market image (panicky-at-ease $\gamma = -0.11$). These results suggest that Hypothesis 10 (affective states) is supported particularly by the wealth creation and immoral image dimensions.

In all of the consequence regressions, the control variables were risk proneness, optimism, education and net wealth. These were significant in 89%, 56%, 33%, and 22% of the regressions respectively. Further, the standardized regression coefficients for risk proneness were larger, in absolute value, than those for any of the other control variables (δ ranges from 0.12 to 0.25), except in the information search regression where education had the strongest impact ($\delta = 0.19$). Because the stock market is universally accepted as a risky environment, it is reasonable to see that risk proneness played a key role in all but one consequence relationship. As a robustness check, all regressions were rerun without the control variables. The significance of the estimated regression coefficients were virtually unchanged and the overall conclusions that wealth creation and an immoral stock market image dimension are the two most important dimensions for the consequences remains.

6.3. Robustness

This section addresses several empirical issues that could affect the regression results starting with an investigation into potential multicollinearity in the estimation of Eqs. (1) and (2). We also consider endogeneity between the consequences and the stock market image dimensions in the estimation of Eq. (2).

6.3.1. Multicollinearity

Collinearity among the right hand side variables in any regression can lead to large variances for the coefficient estimates and tends to manifest itself in rejection of statistical tests and coefficients with incorrect signs. To assess the possibility of multicollinearity among the explanatory variables of the antecedent regressions (Eq. 1), we examine the pairwise correlations and the Variance Inflation Factors (VIF) as part of the regression diagnostics. The pairwise correlations between the right hand side variables (Table 6) indicate that the strongest significant relationship is between investing experience and age (0.43) and the second highest is between financial literacy and investing experience (0.29) and between gender and financial literacy (-0.29). A pairwise correlation of at least 0.8 (in absolute value) is considered a high correlation (Kennedy, 2008). Because none of our

Table 6 Correlations of the right hand side variables in the Antecedent Regressions

Variable	Trust	Social	Financial literacy	Investing experience	Gender (2 = female, 1 = male)	Age
Trust	1					
Social	0.1202**	1				
Financial literacy	0.0954*	−0.1024*	1			
Investing experience	0.1402**	−0.0149	0.2919**	1		
Gender (2 = female, 1 = male)	0.1476**	0.0972*	−0.2897**	−0.0442	1	
Age	0.1482**	−0.0914*	0.1140**	0.4296**	−0.0559	1

**, * Indicate statistical significance at 1% and 5%, respectively.

correlations meet or exceed this cutoff, we do not expect issues because of multicollinearity. In addition, to deal with possible linear combinations involving more than two variables, the VIF is calculated for each explanatory variable in each regression. Although the VIF is not a statistical test, a commonly applied rule of thumb is that a VIF >10 indicates problems because of multicollinearity (Kennedy, 2008). In each regression the VIF for each independent variable is less than 1.34, which is well below the rule of thumb cutoff of 10, suggesting that multicollinearity is not an issue in estimating Eq. (1). Thus, based on the correlations and the VIF, multicollinearity is not expected to interfere with the regression output for Eq. (1).

The explanatory variables in the consequence regression are the six stock market image dimensions and four controls. Again, we use correlations and the VIF to explore possible multicollinearity. The strongest correlations among the image dimensions are for facilitators and regulators with wealth creation (0.64), immoral with economic bellwether (−0.57), facilitators and regulators and economic bellwether (0.57), wealth creation and economic bellwether (.52) (Table 7). The lowest significant correlation is 0.10 and 50% of the significant correlations are between 0.2 and 0.3. Among the control variables, the most notable significant correlations are between optimism and net wealth (0.19) and next biggest is between education and net wealth (0.18). Because none of the correlations exceeds 0.8, we do not expect issues because of multicollinearity. In addition, the VIF is calculated for each explanatory variable in each consequence regression. The calculated VIFs ranged in value from 1.14 to 2.43. Thus, according to this rule of thumb, multicollinearity is not interfering with the coefficient estimates nor their interpretation.

6.3.2. Endogeneity

No empirical method can prove causation. Our theory and our model (Eq. 2) suggest that the stock market image dimensions may predict the consequences. It is possible that the consequence variables and the stock market image dimensions are endogenous and thus our Ordinary Least Squares (OLS) regression results would be biased and inconsistent. If this is the case, then an instrumental variables (IV) estimator rather than OLS should be used to estimate the equation. We used the Hausman test to determine if OLS or two stage least squares (2SLS) should be used to estimate the equation. To do the Hausman test and 2SLS, instruments for the potentially endogenous variables must be specified. The instruments must be (1) highly correlated with the endogenous variable and (2) not correlated with the error

Table 7 Correlations of the right hand side variables in the consequence regressions

	Immoral	Fac and reg	Econ bell	Wealth create	Fast money	Tilt play field	RiskP	Opt	Educ	NetW
Immoral	1									
Fac and reg	-0.4016**	1								
Econ bell	-0.5725**	0.5663**	1							
Wealth create	-0.2726**	0.6384**	0.5200**	1						
Fast money	0.2291**	0.3395**	0.0779	0.3224**	1					
Tilt play field	0.5280**	-0.232**	-0.3414**	-0.2218**	0.1076*	1				
RiskP	-0.1425**	0.1160*	0.1278**	0.2651**	0.0048	-0.1679**	1			
Opt	-0.3101**	0.1677**	0.2266**	0.1439**	-0.0828	-0.2264**	0.0980*	1		
Educ	-0.0686	-0.0843	-0.0124	0.0805	-0.0678	0.0356	0.0478	0.1396**	1	
NetW	-0.0837	0.0116	0.0712	0.0774	-0.0754	-0.0920	-0.0103	0.1923**	0.1816**	1

***, ** Indicate statistical significance at 1% and 5%, respectively.

Immoral = immorality; Fac and reg = facilitators and regulators; Econ bell = economic bellwether; Wealth Create = wealth creation; Tilt play field = tilted playing field; RiskP = risk proneness; Opt = optimism; Educ = education; NetW = net wealth.

term. Finding suitable instruments is always an issue. The three most common approaches are: (1) finding a suitable exogenous variable, (2) using the rank of the endogenous variable, and (3) using the lag of the endogenous variable. We used the second approach because the correlations of the stock market image dimensions were strong (0.95 to 0.98), but, as previously noted, the controls and the stock market image dimensions had weak correlations. Furthermore, we did not use the third approach because it is meant for time series data. The correlation of each stock market image dimension and its rank ranged from 0.95 to 0.98. The Hausman test applied to Eq. (2) using the rank of the stock market image dimension variables as their instruments indicates that OLS is preferred to 2SLS. This does not mean that we have proved that the image dimensions cause the consequences but rather it suggests that the best way to estimate the specified relationship is to use OLS rather than 2SLS. Thus, our results are robust to potential endogeneity and multicollinearity issues.

7. Implications, limitations, and future research directions

As it is well recognized that perception is more important than reality, a focus on subjective impressions is promising for stock market research. This study builds on the recent introduction of stock market image to the finance literature (Dobni and Racine, 2015), proposing and testing several antecedents and consequences of the construct. It emphasizes the need to understand perceptions of the stock market in a comprehensive and integrated way, and helps to fill research gaps in the processes by which images are formed and how these images in turn impact behavior (Bravo et al., 2012). Insights from this study will assist efforts to manage stock market image as a resource.

The findings of this study suggest that different dimensions of stock market image are affected by different subsets of antecedents. Supply chain members should contemplate their roles in shaping stock market image and how these findings might relate to that task. For example, the financial literacy antecedent significantly affects five of the six image dimensions, adding to the growing call for promoting financial literacy initiatives among the public (van Rooij et al., 2011). The trust and sociability variables significantly affect five and three image dimensions, respectively, suggesting that strategies for stimulating positive word of mouth about and bolstering public trust in the stock market may be useful. These results confirm links previously observed between these variables and investing behavior (Guiso et al., 2008; Hong et al., 2004), but indicate an alternative mechanism through which they might operate.

The results of this research were consistent with the cognitive-affective-behavioral model advanced by Ajzen and Fishbein (1980), as stock market image dimensions had a significant effect on several behavioral variables. For instance, investors who view the stock market as a wealth creating vehicle seemed to take it more seriously and enjoy more rewarding experiences. Perceiving the stock market as immoral was shown to lead to stronger emotional responses in the form of feelings of panic and loss of control and to encourage investing for hobby or speculation purposes. As they help to inform and shape investing responses and outcomes, it is important to understand perceptions about the stock market

(including distortions, biases, and misperceptions) and how they are generated so that strategies for improving the investor experience can be better designed (O'Shaughnessy, 1987).

Future research could explore other demographic, socioeconomic, and psychographic antecedents of stock market image. For example, this study did not account for other agents that may impact image, such as marketer-controlled variables and external stimuli like the media, or how the effect of antecedents and stock market image might change in response to external shocks such as a financial crisis. More comprehensive models that include these agents need to be developed and tested. It is also arguable that some of the variables specified as consequences of stock market image could be treated as its antecedents. These include satisfaction with stock market returns and emotional reactions to stock market investing. Future studies should more definitively assess the size and direction of these relationships.

Trust was shown to be an influential determinant of stock market image, and it needs to be more fully understood. This could entail developing a context-specific definition and measure of trust and identifying the attributes and actions that engender it. Other important questions include: What mental calculations occur when investors make the decision to trust? What are the drivers and root causes of trust and distrust, and are they heterogeneous across investor segments? How are the hurdles created by low levels of trust best overcome?

There may be value in probing individual image dimensions, such as the tilted playing field component. Because perceived fairness of markets may be a hygiene issue for most lay investors, the factors that shape this dimension, investor understanding of its implications, and ways to adjust for it should be studied. The fast money dimension is linked to behaviors consistent with a financial playground; as some investors are driven by recreational motives, possible research topics include a deeper understanding of their expectations and outcomes, and ways to increase the entertainment value attached to their investing activity. Future research could also address the efficacy of executing image management strategies one dimension at a time, including how doing so disrupts overall image profiles. To what extent do the dimensions evolve in tandem, and how does performance on one affect performance on the others?

This research was cross-sectional and thus was not designed to examine the processes involved in changing perceptions of the stock market. It would be useful to study organizations engaged in rehabilitation strategies, such as the China Securities Regulatory Commission (see Philip, 2012), to better illuminate wrong and right ways to repair or enhance image. This work could track how the images held by investors change over time as the strategies are executed, including how they incorporate new information into existing impressions, which communicative sources and rehabilitative efforts hold the most sway, and how resistant to change image dimensions are.

Perceptions about the stock market are likely to elicit psychological and behavioral responses beyond the consequences studied here, and future research should identify and investigate them. Possible subjects include investor trading practices, decision making, and risk and return management strategies. Further, the impact of stock market image relative to other factors that influence investment decision making should be gauged. Such insight could go a long way to revealing how much stock market image matters and how much effort should be devoted to monitoring, measuring, and managing it.

Appendix 1 Stock Market image scale

Descriptive title and image statements	Cronbach's α	Factor loading
Immorality	.851	
The stock market is corrupt.		.702
The stock market is rigged.		.701
The stock market is under-regulated.		.669
The stock market is harmful to society as a whole.		.643
Investing in the stock market is for suckers.		.585
In their ongoing publicity efforts, publicly traded corporations commonly mislead investors.		.574
Use of insider information is common in the stock market.		.527
Losses and gains in the stock market are just a matter of chance.		.496
Facilitators and regulators	.876	
In general, financial services professionals (for example, financial planners, stock brokers) are trustworthy and honest.		.725
In general, financial services professionals (for example, financial planners, stock brokers) have the best interests of investors in mind.		.725
In general, financial services professionals (for example, financial planners, stock brokers) provide good information to help make stock market investment decisions.		.669
Stock market regulators do a good job of safeguarding investor interests.		.584
The financial information that publicly traded companies disclose is straightforward and honest.		.572
Regulation of insider trading is effective.		.553
The stock market is fair for all investors.		.538
Stock market investors are adequately protected by antifraud and mandatory disclosure rules.		.557
Economic bellwether	.790	
The stock market plays an important role in supporting the growth of the economy.		.721
The stock market is a measuring stick of the health of the economy.		.662
The stock market has little relevance to real economic activity.*		-.603
There are enough good quality investment opportunities in the stock market.		.543
Wealth creating capacity	.806	
The greater financial risk is being out of the stock market rather than being in it.		.697
The benefits of investing in the stock market outweigh the costs.		.659
Investing in the stock market is one of the safest investments an investor can make.		.637
The stock market is sound.		.566
The odds are in favor of the individual investor making money in the stock market.		.565
If one is serious about building wealth, the stock market as an investment vehicle cannot be ignored.		.442
Fast money	.557	
The key to successful stock market investing is hot tips.		.661
Investing in the stock market is a way to make money easily and quickly.		.651
If you are smart, it is easy to pick individual stocks that will have better than average returns.		.638
Tilted playing field	.568	
The stock market is controlled by large (institutional) investors.		.660
Only highly skilled investors can consistently make money in the stock market.		.562
It is difficult for small investors to make money in the stock market.		.422

* Indicates items that are reverse coded.

Appendix 2 Description of variables

Disposition to trust (adapted from Naef and Schupp, 2009)

Please indicate how much you agree or disagree with each of the following statements:

1. In general, people can't be trusted.
2. When dealing with strangers, it is better to be cautious before trusting them.
3. Nowadays you can't rely on anybody.

[1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree]

Investor sociability (adapted from Hong, Kubik, and Stern, 2004)

During the past 12 months how often have you have engaged in:

1. Giving or attending a dinner party
2. Entertaining people in your home
3. Visiting with friends
4. Attending a church or other house of worship
5. Doing volunteer work
6. Talking with or visiting your neighbors

[1 = never, 2 = once a year or less, 3 = several times a year, 4 = once a month, 5 = several times a year, 6 = several times a week, 7 = almost every day]

Investing experience

How many years have you been investing in the stock market, either directly or in a self-directed retirement plan?

Investing motives

To what extent does each of the following describe your objectives for investing in the stock market?

1. Wealth accumulation: Acquiring a higher expected return than on a savings account
2. Hobby and entertainment: Interest in the stock market
3. Saving for retirement: Being able to stop working at an earlier age
4. Speculation: Trying to profit from short-term developments in the stock market

[1 = not at all, 2 = slightly, 3 = somewhat, 4 = moderately, 5 = quite a bit, 6 = extremely]

Affective states

When you are/were invested in the stock market, how do/did you typically feel about it?

- Out of control 1 2 3 4 5 6 7 in control
- Excited 1 2 3 4 5 6 7 bored
- Panicky 1 2 3 4 5 6 7 at ease

Investor satisfaction

How satisfied are you with your past returns from your stock market investments?

[1 = very dissatisfied . . . 7 = very satisfied]

Portfolio diversification

On average, how many different stocks do you typically hold in your portfolio?

Net wealth

Calculated as the difference between responses to the following questions:

What is the estimated total value of your assets (please include the value of your house and other real estate holdings, investments in stocks, bonds, term deposits, GICs, employer-sponsored pension plans and cash holdings in savings or checking accounts)? And What is the estimated total value of your debt (please include the value of your real estate mortgages, student, personal and payday loans, outstanding credit card balances, outstanding balances on lines of credit)?

Risk proneness

How would you classify your willingness to take risks in financial decision?

[1 = very risk averse . . . 7 = very risk seeking]

Level of optimism (adapted from Scheier, Carver, and Bridges, 1994)

(continued on next page)

Appendix 2 (continued)

Please indicate how much you agree or disagree with each of the following statements:

1. I rarely count on good things happening to me.
 2. I'm always optimistic about my future.
 3. In uncertain times, I usually expect the best.
 4. If something can go wrong for me, it will.
 5. Overall, I expect more good things to happen to me than bad things.
 6. I hardly ever expect things to go my way.
- [1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree]

Information search

Which of the following sources of information influence your decisions about the stock market investments you make? (Check all that apply)

1. Information from the company
2. Advice and forecasts from brokers
3. Discussions with friends and family members
4. Information from magazines and newspapers
5. Information from television
6. Online research
7. Social networking sites
8. Other (please specify)

Financial literacy (Pleis, 2007)

Next, we are going to ask some questions which will help gauge your knowledge of financial matters. ***If you are not sure about the answer to a question, please do not guess; instead, select the "Do not know" option.***

1. All of the following are advantages to the purchase of common stock EXCEPT: (a) It can provide a good income stream (b) There is good liquidity (c) There can be tax advantages for long-term purchases (d) The return is guaranteed by the issuing company (e) Do not know
2. If you buy a company's stock: (a) You own a part of the company (b) You have lent money to the company (c) You are liable for the company's debts (d) The company will return your original investment to you with interest (e) Do not know
3. To minimize investment risks, your best strategy is: (a) Only invest in well-established companies that pay annual dividends (b) Invest in bonds or real estate (c) Keep your money in the bank or invested in a certificate of deposit (d) Diversify your portfolio to include stocks, bonds, mutual funds, real estate, and cash (e) Do not know
4. Over the last 70 years, the type of investment that has earned the most money and the highest rate of return for investors has been: (a) Stocks (b) Corporate bonds (c) Savings accounts (d) Do not know
5. When a company wants to issue stock in itself, it issues an IPO. What is an IPO? (a) Investment profit organization (b) a dividend (c) A meeting with the securities regulation commission (d) Initial public offering (e) Do not know
6. Which of the following increases the value of your money in stocks? (a) Increase in price per share (b) Dividends (c) Stock splits (d) All of the above (e) Do not know
7. In terms of investing, bonds are: (a) Loans that investors make to companies (b) Investments that provide monthly income to investors (c) A business promise with your broker (d) The stock of a new company (e) Do not know
8. A mutual fund is: (a) An investment instrument for married couples (b) Any tax-exempt investment (c) A paycheck deduction that goes to your retirement savings (d) A pooled group of investment instruments (e) Do not know
9. Which of the following organizations insures you against losses in the stock market? (a) FDIC (Federal Deposit Insurance Company) (b) SEC (Securities and Exchange Commission) (c) NBC (National Bank of Canada) (d) None of the above (e) Do not know
10. What is short selling? (a) Buying shares in the morning and selling them before the close of business on the same day (b) Borrowing shares, selling them, and buying them back for less money after the price has fallen (c) Buying a small quantity of shares (d) Continuously selling shares after holding them for short periods of time (e) Do not know

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